Does compliance with the (UK's) Code of Practice mean that the figures are right?
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Abstract

The UK's Code of Practice for Official Statistics is a requirement of the Statistics and Registration Service Act 2007. That Act empowered the UK Statistics Authority to produce a Code, compliance with which would be a statutory requirement on all government bodies that produce statistics labelled as 'National Statistics'. Under the legislation, compliance with the Code is assessed independently and reported publicly for each set of National Statistics.

The Code was published in January 2009 and covers much the same ground as the European Statistics Code of Practice and other national and international statistical Codes. It sets out the standards that the Statistics Authority expects producers of official statistics to follow, whether or not those statistics are designated as National Statistics. Assessment reports include steps that must be taken by the producer organisation in order to retain, or in some cases obtain, the National Statistics badge.

Compliance with the Code means many things but it does not necessarily mean that the statistics are 'right'. They must be the best that could reasonably be produced at the time; they must be useful; and they must be well explained. But they could still be relatively inaccurate. Statistics of violent crime are one example of figures that cannot be said to be an accurate count of the thing to which they relate.

This paper discusses what 'right' means, in relation to statistics, outlines the way that the Code addresses the 'rightness' issue implicitly, and discusses the way in which Code compliance can be described for what it does, and doesn't, mean.

The Code of Practice for Official Statistics, independent Assessment and National Statistics designation

The *Statistics and Registration Service Act 2007*[1] established the UK Statistics Authority with the aim of safeguarding the production and publication of official statistics to serve the public good. To further this aim the legislation required the Authority to develop a Code of Practice for Official Statistics[2] and to assess compliance against it. When we conclude that a producer needs to take action to strengthen their compliance with a particular aspect of the Code, we identify a Requirement. When the Requirement is implemented, we give the set of statistics a full designation as 'National Statistics'.

The Authority's Monitoring and Assessment (M&A) Team has published an Assessment Work Programme[3], showing when we expect to start assessing each set of statistics. The challenge is to assess over 1,200 separate sets of statistics, so we have grouped these in order to make the process more efficient. The M&A Team consists of about 20 staff, working from three sites (London, Newport and Edinburgh). The Team is multi-disciplinary, including statisticians, social researchers, economists, and an auditor.

For each assessment, we contact a selection of users so that we can take account of their views, and we review written evidence (about Code compliance) provided by the producers. In addition we look at statistical publications and websites to form our own judgement about the accessibility of the statistics.

Right statistics, right methods, right explanation - the Code of Practice

A lay interpretation of 'right' statistics would probably assume it to mean that the statistics are accurate (or precise). Accuracy is often inherently difficult to determine. Moreover it is not in itself a sufficient condition to enable users to draw valid conclusions from a set of statistics. It is possible for statistics to be accurate yet misleading, or conversely, inaccurate yet informative.

Right statistics - measuring the right things

Take the example of statistics on school examination results. The results themselves are accurate and therefore 'right' as an indicator of the numbers of students achieving particular grades in particular qualifications in a given year. Drawing inferences beyond this is more problematic. In England published school level examination results are ranked (by journalists) in the form of league tables according to the examination results achieved – typically the proportion of eligible students who achieve certain results in the main public examination (GCSE) taken at the age of 16.

On the assumption that examination results are a proxy indicator of the quality of educational provision, parents often use these league tables to help inform their choice of school for their children. However, some academics argue that it is not appropriate for examination results to be used in this way - and that school league tables should therefore not be published.

Whether statistics are useful is not simply a question of accuracy. The question is whether the statistics are fit to be used for a given purpose. Examination results are not appropriate as a tool with which to judge *future* performance reliably; they are not an indicator of how skilled people are when they leave school; and they are not, by themselves, a measure of the quality of a school. For these uses, other statistics are required.

To ensure the relevance and utility of statistics the UK's Code of Practice for Official Statistics stipulates that users should be effectively engaged with, their views and needs taken account of, and that planning and priority-setting be conducted systematically and transparently.

Right methods - producing statistics in the right ways

The Code does not detail the methods that should be used to produce statistics. Instead, in common with other codes of practice, it describes generic standards. For example, it requires official statistics to be produced according to scientific principles and independent of non-statistical considerations. It also requires that the methods used should result in statistics of a quality that meets users' needs, and that suitable information about quality (and methods) should be published.

Right explanation - presenting statistics in the right ways

The Authority believes that the value of official statistics is maximised when they are used, in an informed capacity, for decision making – either now, or at some stage in the future. The Code seeks to create an environment in which users can make informed judgements about the suitability of a set of statistics for any likely use. The Code promotes the practice of providing 'information on the quality and reliability of statistics in relation to the range of potential uses, and on methods, procedures and classifications'. The aim of the Code is to ensure that statistics are communicated in such a way that the value of the statistics can be fully realised, and that the risk of misuse due to misunderstanding is minimised.

This can be achieved in a number of ways - by ensuring that written commentary is focused upon the likely uses of the statistics, that there is sufficient and accessible guidance and descriptive information (or 'metadata') available, and by the use of conceptual (descriptive) frameworks. Of course the onus remains on the user to make their own decision (based on the information given) about whether a set of statistics is suitable for use in a particular context – but we feel that producers should do all they reasonably can to help users and potential users.

Findings from assessment

An analysis of the findings of the 27 assessment reports published by the Authority in 2009[4] has shown that statistical methods are generally sound. However, it has also shown that producers could do more to engage with users and to improve the presentation of statistics and accompanying descriptions.

The assessment of road casualty statistics[5] against the Code of Practice exemplifies many of the points made above about 'right statistics, right methods, right explanation'. These statistics are derived from a police recording system. They are probably appropriate as a measure of police activity relating to road traffic accidents. But research using hospital admissions data has shown the real level of road casualties to be closer to twice the number recorded in the official figures. The assessment concluded that as a measure of the actual number of road accidents and casualties, the statistics were misleading. The assessment found that the commentary accompanying the statistics did not convey this issue of under-reporting sufficiently clearly, and that the presentation of the figures implied a level of precision that could not be justified. In order to retain the National Statistics badge the producer was required to:

- Develop a best approximation of the numbers of casualties based on research into the under-counting, and include these estimates in the published counts to inform the user of the scale of the problem.
- Bring together as much relevant data as possible at the time the statistics are released, to help explain the weakness in the police reported data.
- Publish plans to improve the reporting of data by police forces.
- Change the title of the statistical publication, and the commentary and tables, to reflect the fact that the statistics are derived from information reported to the police.

This set of requirements addresses directly the need for the right statistics about road casualties, produced using the right methods, and explained in the right ways.

What does Code-compliance mean?

The text in Annex 1 is included in every assessment report, to summarise what designation as National Statistics means. But if Code-compliance is assumed to mean something that it doesn't, then the Code and National Statistics designation could be challenged.

In particular, it is possible that we could assess a set of statistics, find them to be Code-compliant and designate them as National Statistics, without picking up a systematic error or some other undocumented quality problem (that hadn't been brought to our attention, and that we hadn't been looking for) which could make certain uses of the statistics questionable. Or more prosaically, a set of National Statistics could simply include some mistakes because a spreadsheet has not worked properly. If such a situation arose, the assessment process could be perceived as deficient and it is possible that questions could be asked about the value of a Code of Practice which does not seem to require statistics to be 'right' – in the sense of having been calculated correctly.

In such circumstances we would point to the elements of the Code that require producers to 'ensure that official statistics are produced to a level of quality that meet users' needs, and that users are informed about the quality of statistical outputs', and to 'adopt quality assurance procedures …', and 'to publish quality guidelines'.

But this could be seen as unduly defensive. Ideally the assessment process would be sufficiently rigorous that we could be confident that we would identify any 'incorrect' statistics – but we are not in a position to be able to do this. Therefore, in the same way that we require producers of statistics to describe the limitations of their statistics, so we should explain better the limitations of the assessment process.

Conclusion

The process of assessing a set of statistics against a Code of Practice is quite distinct from a traditional statistical quality review, although there are overlaps. We regard both assessment and quality reviewing to be important activities in ensuring and demonstrating the value and trustworthiness of a set of statistics.

This paper has deliberately used the loose concept of “rightness” to highlight three substantive points – that:

1. the Code of Practice might be paraphrased as ‘right statistics, right methods, right explanation’;
2. the Code does not attempt to set any sort of accuracy standard or threshold, instead relying on the more flexible concept of fitness-for-purpose – in keeping with the user-centric nature of the Code;
3. there should be a clear explanation of what it means to be Code compliant, and what it does not mean.

Bearing (3) in mind, the Authority will consider adding to the text shown in all assessment reports (see Annex 1) the following:

> “Designation as National Statistics should not be taken to mean that the statistics are always correct. For example, whilst the Code requires statistics to be produced to a level of accuracy that meets users’ needs, it also recognises that errors can occur – in which case it requires them to be corrected and publicised”.

Annex 1: Description of what National Statistics designation means, as included in published Assessment Reports

ASSESSMENT AND DESIGNATION

Under the provisions of the *Statistics and Registration Service Act 2007*, the UK Statistics Authority has a statutory function to assess sets of statistics against the Code of Practice for Official Statistics, with a view to determining whether it is appropriate for the statistics to be designated, or to retain their designation, as National Statistics.

Designation as National Statistics means that the statistics are deemed to be compliant with the Code of Practice. Whilst the Code is wide-ranging, designation may be broadly interpreted to mean that the statistics meet identified user needs; are produced, managed and disseminated to high standards; and are well explained.

Designation also signifies that, subject to any caveats in this report, the Statistics Authority judges that the statistics are readily accessible, produced according to sound methods and managed impartially and objectively in the public interest.

Assessment reports will not normally comment further, for example on the validity of the statistics as a social or economic measure; though reports may point to such questions if the Authority believes that further research would be desirable.

Designation as National Statistics will sometimes be granted in cases where some changes still need to be made to meet fully the requirements of the Code, on condition that steps are taken by the producer body, within a stated timeframe, to address the weaknesses. This is to avoid public confusion and does not reduce the obligation to comply with the Code.

Designation is granted on the basis of the information provided to the Statistics Authority, primarily by the organisation that produces the statistics. The information includes a range of factual evidence and also assurances by the producer organisation. The views of users are also sought. Should further information come to light subsequently which changes the Authority's analysis, the Assessment report may be withdrawn and revised as necessary.

Once designated as National Statistics, it is a statutory requirement on the producer organisation to ensure that the set of statistics continues to be produced, managed and disseminated in compliance with the Code of Practice.

REFERENCES

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